

What Is Claimed Is:

- 1           1. A medical method comprising the steps, not necessarily in order, of:  
2           positioning a patient for a first medical procedure;  
3           molding a locator to external features of a patient, the locator being placed  
4           in registry with a portion of the patient;  
5           using at least 3 fiducial markers that are fixed relative to the locator a first  
6           time to get precise positioning information relative to at least part of the patient, the  
7           locator remaining mechanically free during this step;  
8           performing a first medical procedure on the patient, the locator remaining  
9           mechanically free during this step;  
10          after the first medical procedure, removing the locator from the patient;  
11          at a later time after the removing of the locator, re-attaching the locator to the  
12          patient, the locator again being in registry with the portion of the patient and having  
13          an identical orientation relative to the portion of the patient as when the locator was  
14          previously attached;  
15          after the re-attaching step, using the fiducial markers a second time to get  
16          precise positioning information relative to the at least part of the patient, the locator  
17          remaining mechanically free during this step; and  
18          after the re-attaching step, performing a second medical procedure on the  
19          patient, the locator remaining mechanically free during this step.

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1           2. The medical method of claim 1 wherein;  
2           before performing the second medical procedure, the patient is positioned  
3           using a positioner independent of the locator to adjust and secure at least the portion  
4           of the patient in a desired position.

1           3. The medical method of claim 1 wherein the attaching and re-attaching of  
2           the locator is non-invasive.

1           4. The medical method of claim 3 wherein the locator is a face mask molded  
2           to fit in registry with the face of a specific patient.

1           5. The medical method of claim 4 wherein the face mask includes  
2           thermoplastic and the molding step includes the substeps of heating the thermoplastic  
3           and placing it on the face of a patient.

1           6. The medical method of claim 5 further comprising the step of, after the  
2           molding step, attaching the at least 3 fiducial markers to the locator.

1           7. The medical method of claim 6 wherein the at least 3 fiducial markers are  
2   on a marker support and the attaching step includes fixing the marker support to the  
3   locator.

1           8. The medical method of claim 1 wherein the locator is a face mask molded  
2   to fit in registry with the face of a specific patient, and further comprising the step of,  
3   after the molding step, attaching the at least 3 fiducial markers to the locator.

1           9. A method for performing a diagnostic imaging or a therapeutic medical  
2   procedure comprising the steps of, not necessarily in order:

3           putting a mechanically free locator on a patient, the locator including a face  
4   mask having at least 3 fiducial markers thereon;

5           placing the patient adjacent a medical device operable for performing the  
6   diagnostic imaging or therapeutic medical procedure on a patient, the locator  
7   remaining mechanically free during this step; and

8           sensing the positions of the fiducial markers when the patient is in a position  
9   for performing the diagnostic imaging or therapeutic medical procedure using the  
10   medical device, the locator remaining mechanically free during this step.

1            11. The method of Claim 10 wherein the molding step is performed by the  
2    placing of the face mask on the face of a specific patient.

1           13. The medical method of claim 12 wherein the at least 3 fiducial markers  
2    are on a marker support and the attaching step includes fixing the marker support to  
3    the locator.

14. A method of making a medical device that is a mechanically free locator comprising the steps of, not necessarily in order:

- providing a locator having a face portion;
- molding the face portion into a face mask corresponding to the face of a specific person and operable to register with the face of the specific person; and
- attaching at least 3 fiducial markers to the face mask, the fiducial markers operable to provide precise determination of the position of the patient.

1           16. The system of claim 15 further comprising a sensing subsystem for  
2   sensing the position of the at least 3 fiducial markers and an apparatus for applying  
3   therapeutic treatment to a patient; and wherein the sensing subsystem is operable to  
4   allow proper positioning of the patient in order to apply the therapeutic treatment to  
5   specific portions of the patient.

1           18. The system of claim 17 wherein the registration portion allows removal  
2   of the locator from the patient and re-attachment to the patient with an identical

3 orientation relative to the portion of the patient as when the locator was previously  
4 attached.

5

6 19. A system for medical procedures, the system comprising: ✓  
7 a locator attachable to a patient, having at least 3 fiducial markers thereon;  
8 a medical device for performing a diagnostic imaging or a therapeutic medical  
9 procedure on a patient; and

10 a sensing subsystem for sensing the positions of the fiducial markers when the  
11 patient is in a position for performing the medical procedure using the medical device;  
12 and

13 wherein the locator has a registration portion for registration with a portion of a  
14 patient's body, the locator being mechanically free such that a patient is positionable  
15 without applying forces to the locator during patient positioning; and wherein the  
16 locator is molded to fit external features of a specific patient.

1 20. The system of claim 19 wherein the locator is a face mask molded to fit  
2 in registry with the face of a specific patient.

1 21. The system of claim 20 wherein the registration portion allows removal  
2 of the locator from the patient and re-attachment to the patient with an identical

1           22. The system of claim 21 wherein the face mask includes thermoplastic  
2   molded to fit the face of a patient.

1           23. The system of claim 19 wherein the locator includes thermoplastic  
2   molded to fit a portion a portion of a patient.